

EMBEDDED MICROPROCESSOR FOR INTEGRATED CIRCUIT TESTING AND DEBUGGING

ABSTRACT OF THE DISCLOSURE

5 A technique for embedding a microprocessor into an integrated circuit allows on-
chip testing and debugging. The microprocessor present on the chip tests and debugs the
rest of the chip. Both testing and debugging of a programmable logic device use an
embedded microprocessor. Testing is performed by the device manufacturer using a test
system. Debugging is performed by a user using a host computer. A PLD includes
10 programmable logic, an embedded microprocessor and separate memory. Testing or
debugging routines, patterns, simulations, etc., are downloaded onto the memory. The
microprocessor executes the test or debug routine and uploads results to the test system or
host computer. The technique is applicable any integrated circuit that can include an
embedded microprocessor and associated memory, such as a PLD, an ASIC, a memory
15 chip, or an analog chip.